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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CURS, NATHAN M	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,746	AIT SAB ET AL.	
	Examin r	Art Unit	
	Nathan Curs	2633	

-- The MAILING DATE of this communication appears on th cov r sh t with th corr spondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 September 2004.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-35 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-35 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 September 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata (US Published Patent Application No. US 2004/0096220 A1).

Regarding claim 1, Murata discloses a method of transmitting, via an optical transmission line, digital data which includes data of a first type and data of a second type, the second type being data associated with control of errors in corresponding data of at least the first type, wherein; the digital data is transmitted using a plurality of wavelength division multiplexed optical transmission channels (fig. 2, element 8 and fig. 7, element 47) such that data of the first type is transmitted via a channel different from that via which data of the second type is transmitted (paragraphs 0039, 0040, 0043, 0067-0069). Murata discloses an example WDM system with 1-k data channels, and does not disclose that at least some of the data of the second type is derived from data of said first type in only one of said channels. However, Murata does teach that the advantage of his invention is that the transmission system can correct errors at the receiver without increasing the transmission rate of the data (paragraph 0019). Although Murata's example shows 1-k data channels, it would have been obvious to one of ordinary skill in the art at the time of the invention that the Murata invention could be used for

enhancing a one data channel system, where the error correction channel is created, as taught by Murata, from the one data channel and then the error correction channel is WDM multiplexed with the one data channel wavelength, in order to provide the benefit of receiver-side error correction without an increase in the data transmission rate for a system of only one data channel (for example, a traditional optical one-wavelength TDM system).

Regarding claim 2, Murata discloses a method according to claim 1 wherein, data of said first type is transmitted substantially synchronously with data of said second type to which it corresponds (paragraphs 0040, 0041 and 0067-0069).

Regarding claim 3, Murata discloses a method according to claim 1 wherein, data is transmitted in association with alignment data with which data of said first data type and data of said second type may be identified as corresponding to each other (paragraphs 0067-0071, 0073 and 0074).

Regarding claim 4, Murata disclose a method according to claim 1 wherein, data of the second type is derived via forward error correction (FEC) coding of data of the first type (paragraphs 0010, 0040 and 0069).

Regarding claim 5, Murata discloses a method according to claim 1 wherein, data of the first type is segmented into first data blocks and data of the second type is segmented into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks (paragraphs 0039, 0040 and 0045 and 0069).

Regarding claim 6, Murata discloses a method according to claim 5 wherein corresponding first data blocks and second data blocks are transmitted substantially synchronously (paragraphs 0040, 0041 and 0067-0069).

Regarding claim 7, Murata discloses a method according to claim 5 wherein corresponding first data blocks and second data blocks are transmitted in association with alignment data with which said first and second data blocks may be identified as corresponding to each other (paragraphs 0069-0071, 0073 and 0074).

Regarding claim 8, Murata disclose a method according to claim 5 wherein, each one of the second data blocks is derived from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks (paragraphs 0010, 0040 and 0069).

Regarding claim 9, Murata discloses a method of receiving a digital data transmission transmitted via an optical transmission line according to claim 1, wherein the received data of the second type is used in detecting or correcting errors in the received data (paragraph 0045, 0073 and 0075).

Regarding claim 10, Murata discloses a method of receiving a digital data transmission according to claim 9 wherein, data of said first data type is received substantially synchronously with the data of said second said data type to which it corresponds (paragraphs 0041, 0045 and 0073, 0074, 0076 and 0077).

Regarding claim 11, Murata discloses a method of receiving a digital data transmission according to claim 9 wherein, the received data of both the first data type and the second data type includes alignment data, with which received data of said first data type and received data of said second data type may be identified as corresponding to each other (paragraphs 0067-0069, 0073, 0074, 0076 and 0077).

Regarding claim 12, Murata discloses a method of receiving a digital data transmission according to claim 9 wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks

is associated with the detection or correction of errors in a corresponding one of the first data blocks (paragraphs 0045 and 0075).

Regarding claim 13, Murata discloses a method of receiving a digital data transmission according to claim 12 wherein, a given first data block is received substantially synchronously with the said second data block to which it corresponds (paragraphs 0040, 0041, 0073, 0074, 0076 and 0077).

Regarding claim 14, Murata discloses a method of receiving a digital data transmission according to claim 12 wherein, the received data includes first and second data blocks, each block having associated alignment data, wherein the alignment data are employed in identifying which of the received first and second data blocks are corresponding blocks (paragraphs 0073, 0074, 0076 and 0077).

Regarding claim 15, Murata discloses a method of receiving a digital data transmission according to claim 9 wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein each one of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks (paragraphs 0045, 0073 and 0075).

Regarding claim 16, Murata discloses apparatus for transmitting via an optical transmission line, digital data which includes data of a first type and data of a second type, the data of the second type being associated with control of errors in corresponding data of at least the first type, the apparatus including: a data encoder (fig. 2, element 5 and fig. 7, element 45) including; input means for receiving data of the first type, and encoding means for deriving data of said second data type from said first data type, and output means for outputting said first and second data types via separate data channels; and, an optical transmitting means for transmitting data of said first type and corresponding data of said second type via different

wavelength division multiplexed optical transmission channels (fig. 2, element 8 and fig. 7, element 47 and paragraphs 0039, 0040, 0043, 0067-0069). Although Murata's example shows 1-k data channels, it would have been obvious to one of ordinary skill in the art at the time of the invention that the Murata invention could be used for enhancing a one-wavelength TDM system as described above for claim 1.

Regarding claim 17, Murata discloses apparatus according to claim 16 wherein; the data encoder is operable to output data of said first type and corresponding data of said second type substantially synchronously (paragraphs 0040, 0041 and 0067-0069).

Regarding claim 18, Murata discloses apparatus according to claim 16 wherein; the data encoder is operable to output each of said first data type and said corresponding second data type in association with alignment data with which data of said first type and corresponding data of said second type may be identified as corresponding to each other (paragraphs 0067-0071, 0073 and 0074).

Regarding claim 19, Murata disclose apparatus according to claim 16 wherein; said second data type is derived by said data encoder via forward error correction (FEC) coding of data of said first type (paragraphs 0010, 0040 and 0069).

Regarding claim 20, Murata discloses apparatus according to claim 16 wherein; said data encoder is operable to segment data of said first type into first data blocks and to segment corresponding data of said second type into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks (paragraphs 0039, 0040 and 0045 and 0069).

Regarding claim 21, Murata discloses apparatus according to claim 20 wherein; said encoder is operable to output corresponding first data blocks and second data blocks substantially synchronously (paragraphs 0040, 0041 and 0067-0069).

Regarding claim 22 Murata discloses apparatus according to claim 20 wherein; said encoder is operable to output corresponding first data blocks and second data blocks in association with alignment data with which said first and second data blocks may be identified as corresponding to each other (paragraphs 0069-0071, 0073 and 0074).

Regarding claim 23, Murata disclose apparatus according to claim 20 wherein; said encoding means is operable to derive each one of the second data blocks from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks (paragraphs 0010, 0040 and 0069).

Regarding claim 24, Murata discloses apparatus for receiving via an optical transmission line, digital data which includes data of a first type and data of a second type, data of the second type being data associated with control of errors in corresponding data of at least the first type, the apparatus including: an optical receiver (fig. 2, elements 12 and fig. 7, elements 52) including receiving means for receiving optical data signals of the first data type and optical data signals of the second data type via different wavelength division multiplexed optical transmission channels (fig. 2, element 8 and fig. 7, element 47); a data decoder (fig. 2, element 13 and fig. 7, element 54) including input means for receiving data of said first type and data of said second type from said receiving means, wherein; the data decoder includes means with which received data of the first type and corresponding data of the second type are identified as corresponding to each other (paragraphs 0044, 0045, 0068, 0073 and 0075). Although Murata's example shows 1-k data channels, it would have been obvious to one of ordinary skill in the art at the time of the invention that the Murata invention could be used for enhancing a one-wavelength TDM system as described above for claim 1.

Regarding claim 25, Murata discloses apparatus according to claim 24, wherein the data decoder further includes means for using received data of the second type in detecting or correcting errors in the received data (paragraphs 0044, 0045, 0068, 0073 and 0075).

Regarding claim 26, Murata discloses apparatus according to claim 24 wherein, said data decoder is operable to receive data of said first data type substantially synchronously with the data of said second data type to which it corresponds (paragraphs 0041, 0045, 0073, 0074, 0076 and 0077).

Regarding claim 27, Murata discloses apparatus according to claim 24 wherein, the received data of both the first data type and the second data type includes alignment data with which received data of said first data type and received data of said second data type may be identified as corresponding to each other and said data decoder is operable to identify data of the first data type and data of the second data type as corresponding to each other using said alignment data (paragraphs 0067-0069, 0073, 0074, 0076 and 0077).

Regarding claim 28, Murata discloses apparatus according to claim 24 wherein, the data decoder is operable to receive data consisting of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks (paragraphs 0045 and 0075).

Regarding claim 29, Murata discloses apparatus according to claim 28 wherein, said data decoder is operable to receive a given first data block substantially synchronously with the said second data block to which it corresponds (paragraphs 0040, 0041, 0073, 0074, 0076 and 0077).

Regarding claim 30, Murata discloses apparatus according to claim 28 wherein, the received data includes first and second data blocks, each block having associated alignment

data, wherein the data decoder is operable to employ said alignment data in identifying which of the received first and second data blocks are corresponding blocks (paragraphs 0073, 0074, 0076 and 0077).

Regarding claim 31, Murata discloses apparatus according to claim 24 wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein each one of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks, and said data decoder is operable to employ a given one of said second data blocks to detect or correct errors in the first data block to which said given one second data block corresponds (paragraphs 0045, 0073 and 0075).

Regarding claim 32, Murata discloses a method of transmitting, via an optical transmission line, digital data which includes data of a first type and data of a second type, the second type being data associated with control of errors in corresponding data of at least the first type, wherein; the digital data is transmitted using a plurality of wavelength division multiplexed optical transmission channels (fig. 2, element 8 and fig. 7, element 47) such that data of the first type is transmitted via a channel different to that via which data of the second type is transmitted (paragraphs 0039, 0040, 0043, 0067-0069), wherein, data of the first type is segmented into first data blocks and data of the second type is segmented into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks (paragraphs 0039, 0040 and 0045 and 0069), wherein, corresponding first data blocks and second data blocks are transmitted substantially synchronously (paragraphs 0040, 0041 and 0067-0069), wherein, corresponding first data blocks and second data blocks are transmitted in association with alignment data with which said first and second data blocks may be identified as corresponding

to each other (paragraphs 0067-0071, 0073 and 0074), wherein, each one of the second data blocks is derived from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks (paragraphs 0010, 0040 and 0069). Although Murata's example shows 1-k data channels, it would have been obvious to one of ordinary skill in the art at the time of the invention that the Murata invention could be used for enhancing a one-wavelength TDM system as described above for claim 1.

Regarding claim 33, Murata discloses a method of receiving a digital data transmission transmitted via an optical transmission line according to claim 32, wherein the received data of the second type is used in detecting or correcting errors in the received data (paragraph 0045, 0073 and 0075), wherein, the data received consists of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks (paragraphs 0045 and 0075), wherein, a given first data block is received substantially synchronously with the said second data block to which it corresponds (paragraphs 0041, 0045 and 0073, 0074, 0076 and 0077), wherein, the received data includes first and second data blocks, each block having associated alignment data, wherein the alignment data are employed in identifying which of the received first and second data blocks are corresponding blocks (paragraphs 0067-0069, 0073, 0074, 0076 and 0077).

Regarding claim 34, Murata discloses apparatus for transmitting via an optical transmission line, digital data which includes data of a first type and data of a second type, the data of the second type being associated with control of errors in corresponding data of at least the first type, the apparatus including: a data encoder (fig. 2, element 5 and fig. 7, element 45) including; input means for receiving data of the first type, and encoding means for deriving data of said second data type from said first data type, and output means for outputting said first and

second data types via separate data channels; and, an optical transmitting means for transmitting data of said first type and corresponding data of said second type via different wavelength division multiplexed optical transmission channels (fig. 2, element 8 and fig. 7, element 47 and paragraphs 0039, 0040, 0043, 0067-0069), wherein; said data encoder is operable to segment data of said first type into first data blocks and to segment corresponding data of said second type into second data blocks such that a given one of the second data blocks contains data which is associated with the control of errors in a corresponding given one of the first data blocks (paragraphs 0039, 0040 and 0045 and 0069), wherein; said encoder is operable to output corresponding first data blocks and second data blocks substantially synchronously (paragraphs 0040, 0041 and 0067-0069), wherein; said encoder is operable to output corresponding first data blocks and second data blocks in association with alignment data with which said first and second data blocks may be identified as corresponding to each other (paragraphs 0067-0071, 0073 and 0074), wherein; said encoding means is operable to derive each one of the second data blocks from a corresponding one of the first data blocks by forward error correction coding of said one of the first data blocks (paragraphs 0010, 0040 and 0069). Although Murata's example shows 1-k data channels, it would have been obvious to one of ordinary skill in the art at the time of the invention that the Murata invention could be used for enhancing a one-wavelength TDM system as described above for claim 1.

Regarding claim 35, Murata discloses apparatus for receiving via an optical transmission line, digital data which includes data of a first type and data of a second type, data of the second type being data associated with control of errors in corresponding data of at least the first type, the apparatus including: an optical receiver (fig. 2, elements 12 and fig. 7, elements 52) including receiving means for receiving optical data signals of the first data type and optical data signals of the second data type via different wavelength division multiplexed optical

transmission channels (fig. 2, element 8 and fig. 7, element 47); a data decoder (fig. 2, element 13 and fig. 7, element 54) including input means for receiving data of said first type and data of said second type from said receiving means, wherein; the data decoder includes means with which received data of the first type and corresponding data of the second type are identified as corresponding to each other (paragraphs 0044, 0045, 0068, 0073 and 0075), wherein, the data decoder is operable to receive data consisting of first data blocks of the first data type and second data blocks of the second data type wherein one or more of the second data blocks is associated with the detection or correction of errors in a corresponding one of the first data blocks (paragraphs 0045 and 0075), wherein, said data decoder is operable to receive a given first data block substantially synchronously with the said second data block to which it corresponds (paragraphs 0041, 0045, 0073, 0074, 0076 and 0077), wherein, the received data includes first and second data blocks, each block having associated alignment data, wherein the data decoder is operable to employ said alignment data in identifying which of the received first and second data blocks are corresponding blocks (paragraphs 0067-0069, 0073, 0074, 0076 and 0077). Although Murata's example shows 1-k data channels, it would have been obvious to one of ordinary skill in the art at the time of the invention that the Murata invention could be used for enhancing a one-wavelength TDM system as described above for claim 1.

Response to Arguments

3. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER